

Rush

Work Order ID 150548

150548

Page 1

Thursday, August 25, 2016 3:02:40 PM

Item ID: D5311-7 Accept *N900040100* Setup Start *NS1*
Revision ID: Stop *NS2*
Item Name: Prop Rod
Start Date: 8/26/2016 Start Qty: 22.00 *22* Cust Item ID:
Required Date: 8/26/2016 Req'd Qty: 22.00 *22* Customer:
Reference:

Approvals: Process Plan: *dm* Date: *16/08/25* Tooling: Date: Run Start *NR1*
QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D5311	B								

110

0.00

110

Small Fab

Memo

0.00

Small Fab

1- CUT AT 12.00"

2- PUNCH ONE END AS SPEC CONTROL DWG (SEE NOTE8)

3- TRIM OFF ACCESS MATERIAL AS PER DWG.

4- DRILL HOLE AS PER DWG AND DEBURR *J.C. 16-09-09*

22 FF

SEP 09 2016

120

QC5- Inspect part completeness to step on W/O

0.00

120

QC

Memo

0.00

Quality Control

22

DAS
38
9-89

SEP 13 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
2005 08 09 132									
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : ☐					

Work Order ID 150548

Thursday, August 25, 2016 3:02:40 PM

150548

Page 2

Item ID: D5311-7

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Prop Rod

Start Date: 8/26/2016 Start Qty: 22.00

22

Cust Item ID:

Required Date: 8/26/2016 Req'd Qty: 22.00

22

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

Identify as per dwg & Stock Location: _____

0.00

130

Packaging

Packaging

Memo

WA1

0.00

22

SEP 13 2016

DAS
6
9-88

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Quality Control

Memo

0.00

16/9/13

DAS
21
9-88

SEP 13 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval _____																																																								
Description Work Order Deviation				Disposition				Completed By																																																							
								Lead hand / Supervisor Approval Verification																																																							
								QC / QA Coordinator Approval																																																							
Root Cause				FAULT CATEGORY																																																											
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimension ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
																						OTHER : _____																																									

Picklist Print

Thursday, August 25, 2016 3:02:40 PM

Page 1

Work Order ID: 150548

150548

Parent Item: D5311-7

D5311-7

Parent Item Name: Prop Rod

Start Date: 8/26/2016

Required Date: 8/26/2016

Start Qty: 22.00

Required Qty: 22.00

Comments: IIN REV:A 16.02.10 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M304TR0.750W.049

Purchased

No

f

280.4694

23.15789

M304TR0 750W 049

FF SEP 01 2016

304 RD Tube .750 x .049W

Location

Loc Qty

Loc Code

GA002

280.469358

M134306

2.75

M134528

36.473684

M134604

43.420524

M134824

7.618947

M135093

33.68421

M135242

60

M135325

12.920313

M135373

83.60168



NOT Pulled

9.4736800

13.684206

DQA: _____ Date: _____

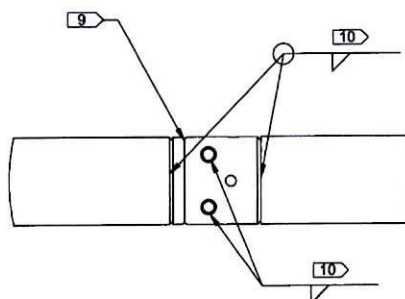
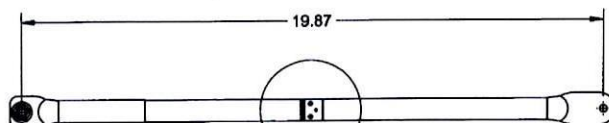
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

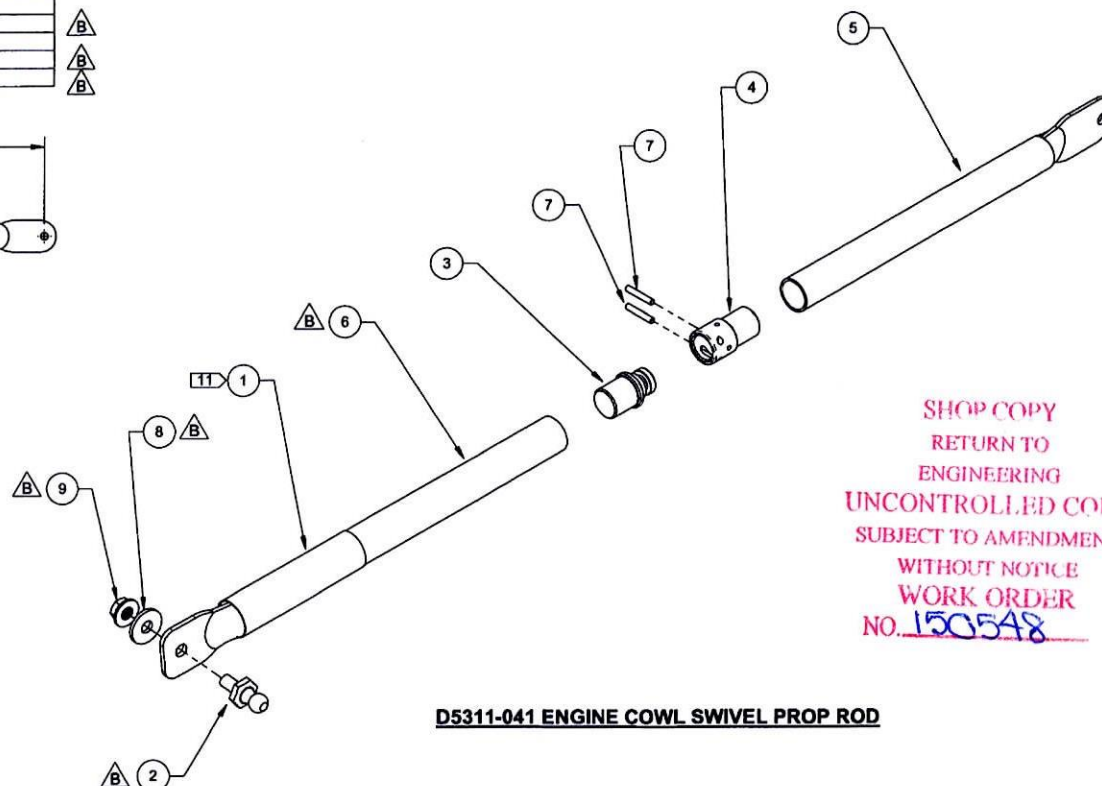
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

ITEM	QTY	P/N	DESCRIPTION
	X	D5311-041	ENGINE COWL SWIVEL PROP ROD ASSEMBLY
1	1	D3158-030	HEAT SHRINK TUBING
2	1	D3622-15	BALL STUD
3	1	D5311-1	SWIVEL JOINT
4	1	D5311-3	SWIVEL JOINT
5	1	D5311-5	PROP ROD
6	1	D5311-7	PROP ROD
7	2	D5317-1	DOWEL PIN
8	1	LN9016-06K	WASHER (ALT: LN9016-06L, 23111AG050LE)
9	1	LN9161-06M	NUT (ALT: ASN52320BH050N)



DETAIL A



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 150548

D5311-041 ENGINE COWL SWIVEL PROP ROD

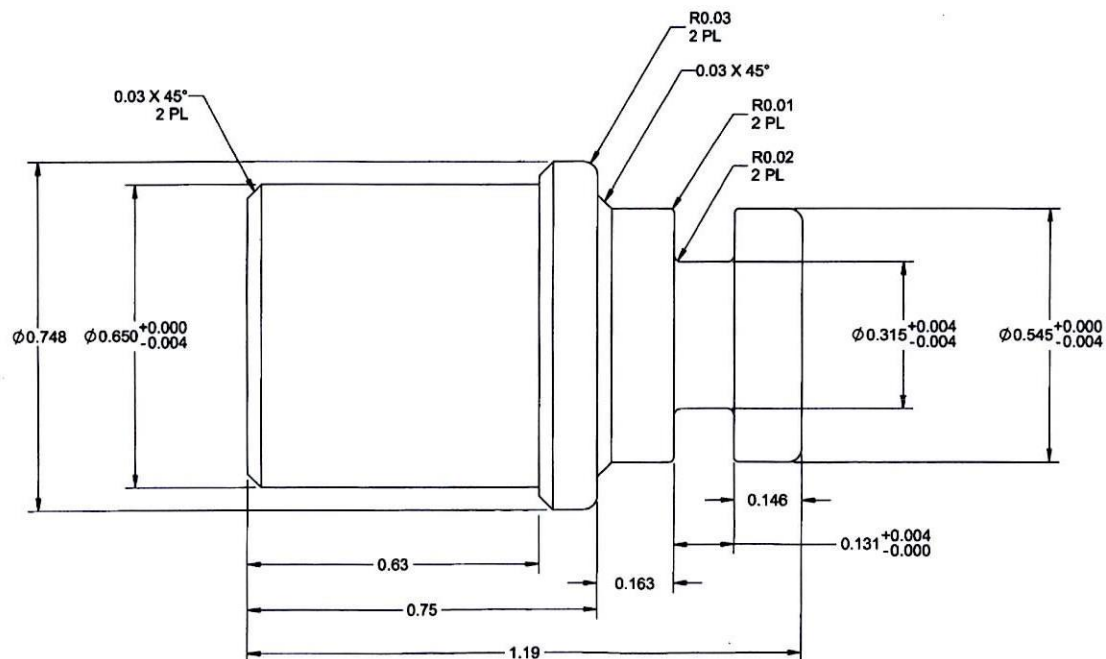
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.91 lbs
- 8) WELD PER QSI 004
- 9) ENSURE ROD SWIVELS EASILY AFTER WELDING
- 10) REMOVE WELDING MARKS USING ELECTROPOLISHER
- 11) INSTALL APPROXIMATELY AS SHOWN

RELEASED
2016-04-18
BN 16-57

APPROVED

B	REVISED D5311-3 DIMENSIONS. ADDED D3622-15 BALL STUD, LN9161-06M NUT AND LN9016-06K WASHER. ADDED D5311-7 PROP ROD (SHEET 5).	AK	16.02.17
A	NEW ISSUE	AK	15.09.28
REV.	DESCRIPTION	BY	DATE
DESIGN	AK	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AK		
CHECKED	CC	DRAWING NO.	REV. B
MFG. APPR.	DD	D5311	SHEET 1 OF 5
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	ENGINE COWL SWIVEL PROP ROD NTS	
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D5311-1 SWIVEL JOINT, INNER

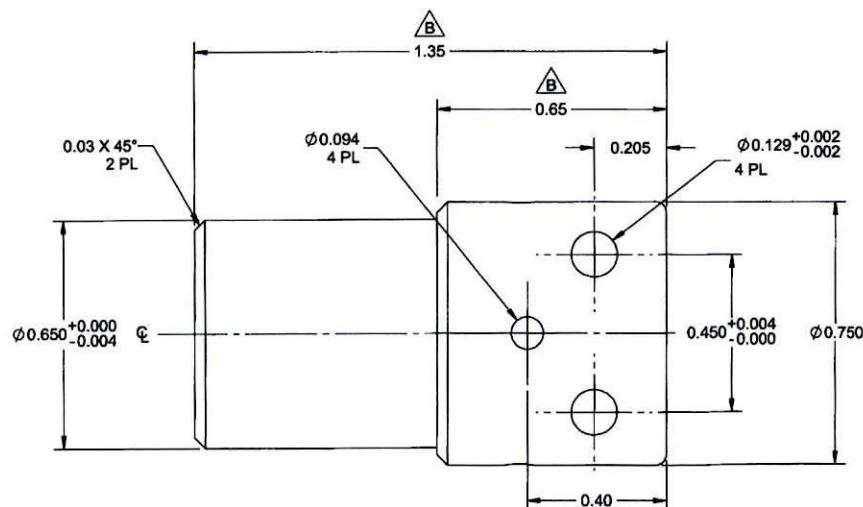
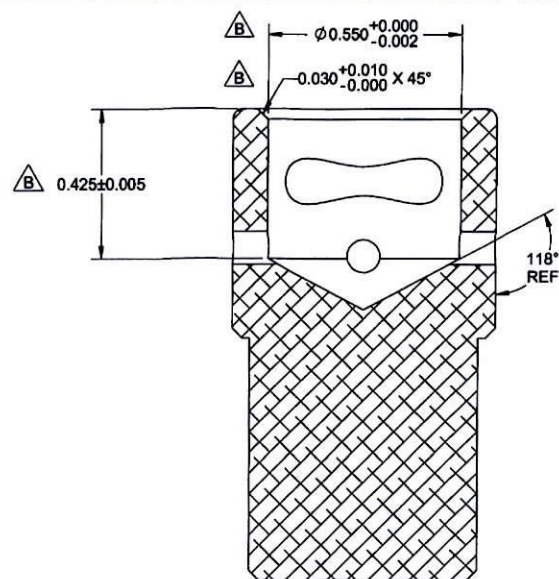
NOTES:

- 1) MATERIAL: AISI 304/316 SS ROUND BAR
PER ASTM A276
REF DART SPEC M304R
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.10 lbs

RELEASED
2016-04-18

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DESIGN	AK	DART AEROSPACE LTD	
DRAWN	AK	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CC	DRAWING NO. D5311	REV. B
MFG. APPR.	DD	SHEET 2 OF 5	
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	ENGINE COWL SWIVEL PROP ROD NTS	
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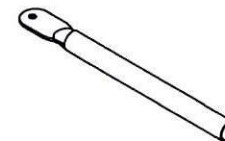
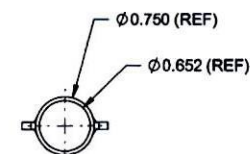
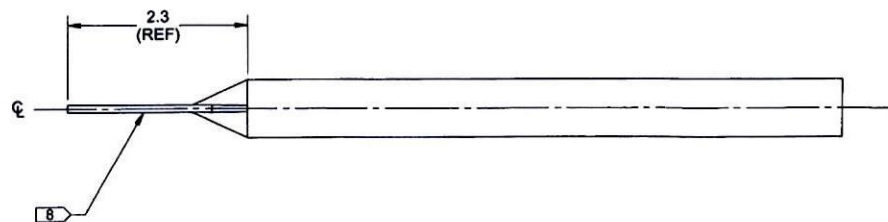
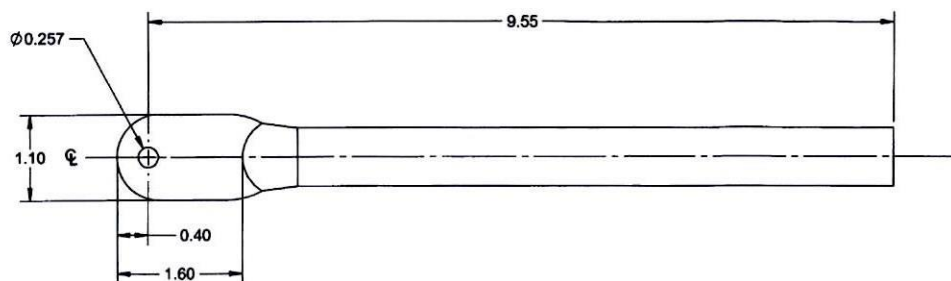


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2016-04-18

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DRAWN	AK	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CC	DRAWING NO.	REV. B
MFG. APPR.	DD	D5311	SHEET 3 OF 3
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	ENGINE COWL SWIVEL PROP ROD	NITS
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D5311-5 PROP ROD

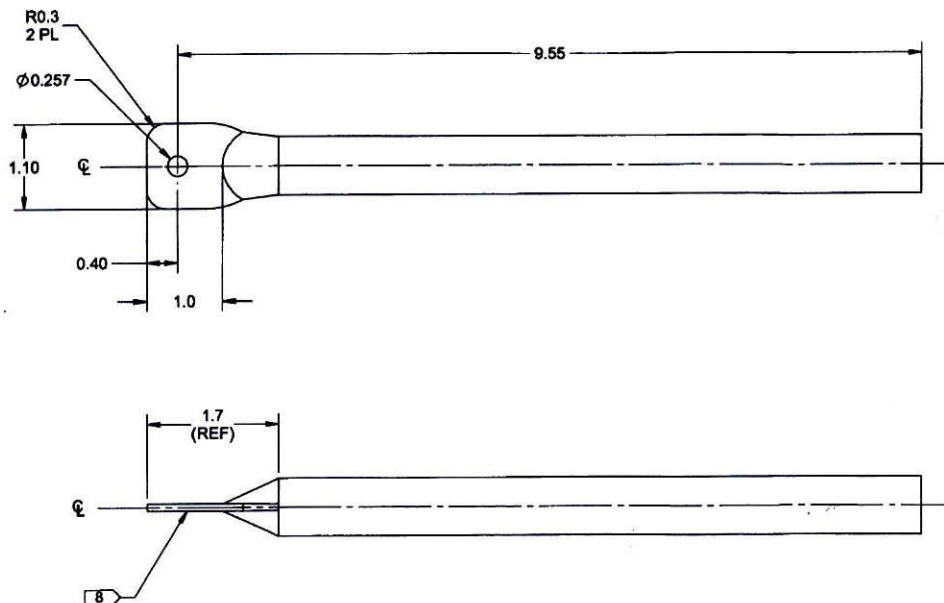
NOTES:

- 1) MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING
PER ASTM A276 OR ASME SA213 OR ASTM A269
REF DART SPEC M304TR0.750W.049
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs
- 8) PUNCH END USING TOOL NUMBER DT8117

RELEASED
2016-04-18

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DESIGN	AK	DART AEROSPACE LTD	
DRAWN	AK	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CC	DRAWING NO.	REV. B
MFG. APPR.	DD	D5311	SHEET 4 OF 5
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	ENGINE COWL SWIVEL PROP ROD NTS	
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D5311-7 PROP ROD

NOTES:

- 1) MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING
PER ASTM A276 OR ASME SA213 OR ASTM A269
REF DART SPEC M304TR0.750W.049
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs
- 8) PUNCH END USING TOOL NUMBER DT8117. TRIM, DRILL NEW HOLE AND FORM CORNERS AS REQUIRED

RELEASED
2016-04-18

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DESIGN	AK	DART AEROSPACE LTD	
DRAWN	AK	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CC	DRAWING NO.	REV. B
MFG. APPR.	DD	D5311	SHEET 5 OF 5
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	ENGINE COWL SWIVEL PROP ROD NTS	
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